

90. (3x Amended) An isolated [A transformed or transfected] host cell for bacterial expression of a glial cell line-derived neurotrophic factor polypeptide comprising the [isolated] nucleic acid of Claim 88.

94. (3x Amended) A method for the bacterial production of glial cell line-derived neurotrophic factor polypeptide comprising the steps of:

- (a) culturing a bacterial [transformed or transfected] host cell containing a nucleic acid sequence according to Claim 88;
- (b) maintaining said host cell under conditions allowing the expression of glial cell line-derived neurotrophic factor polypeptide by said host cell; and
- (c) optionally, isolating the glial cell line-derived neurotrophic factor polypeptide expressed by said host cell.

117. (3x Amended) A purified and isolated DNA sequence encoding a glial cell line-derived neurotrophic factor polypeptide, wherein said nucleic acid sequence:

- (a) comprises nucleotides 304 through 705 of SEQ ID NO:3 or nucleotides 105 through 506 of SEQ ID NO:5; or
- (b) encodes a polypeptide comprising an amino acid sequence set forth in SEQ ID NO:4 or SEQ ID NO:6; or
- (c) hybridizes [to a nucleic acid sequence complementary] to an oligonucleotide probe fully complementary to a nucleic acid sequence encoding the amino acid sequence of SEQ. ID. NO:10 under conditions comprising hybridizing said sequences in 6X SSPE and 0.1% SDS at 50°C, followed by washing in 2X SSPE and 0.1% SDS at room temperature and twice in 0.1x SSPE, 0.1% SDS preheated to 50°C and wherein said polypeptide has the capability to promote dopamine uptake in dopaminergic neurons; or
- (d) hybridizes [to a nucleic acid sequence complementary] to an oligonucleotide probe fully complementary to a nucleic acid sequence encoding amino acids 2 to 86 of SEQ ID NO:4 under conditions comprising hybridizing said sequences in 6X SSPE, 0.1% SDS and 30% formamide at 42°C, followed by washing in 2X SSPE and 0.1% SDS at room temperature and twice in 0.1x SSPE, 0.1% SDS preheated to 50°C and wherein said polypeptide has the capability to promote dopamine uptake in dopaminergic neurons.

121. (3x Amended) A purified and isolated nucleic acid sequence encoding a glial cell line-derived neurotrophic factor polypeptide, comprising a sequence which hybridizes [to a nucleic acid sequence complementary] to an oligonucleotide probe fully complementary to a nucleic acid sequence encoding the amino acid sequence of SEQ. ID. NO:10 under conditions comprising hybridizing said sequences in 6X SSPE and 0.1% SDS at 50°C, followed by washing in 2X SSPE and 0.1% SDS at room temperature and twice in 0.1x SSPE, 0.1% SDS preheated to 50°C, or to an oligonucleotide probe encoding amino acids 2 to 86 of SEQ ID NO:4 under conditions comprising hybridizing said sequences in 6X SSPE, 0.1% SDS and 30% formamide at 42°C, followed by washing in 2X SSPE and 0.1% SDS at room temperature and twice in 0.1x SSPE, 0.1% SDS preheated to 50°C, and wherein said polypeptide has the capability to promote dopamine uptake in dopaminergic neurons.

122. (Twice Amended) A purified and isolated nucleic acid sequence according to claim 117, 118, 119, 120 or 121 further comprising a codon encoding an amino-terminal methionine residue when said polypeptide is recombinantly produced by a bacterial expression system.

127. (Twice Amended) An isolated [A transformed or transfected] host cell comprising a nucleic acid of claim 117, 118, 119, 120 or 121.

135. (Twice Amended) An isolated [A transformed or transfected] host cell which expresses a nucleic acid sequence encoding a glial cell line-derived neurotrophic factor polypeptide, said nucleic acid sequence operatively linked to a non-native promoter, wherein said nucleic acid sequence:

- (a) comprises nucleotides 105 through 506 of SEQ ID NO:5; or
- (b) encodes a polypeptide comprising an amino acid sequence of SEQ ID NO:6.

137. (Amended) A vector comprising a purified and isolated nucleic acid sequence encoding a glial cell line-derived neurotrophic factor polypeptide comprising an amino acid sequence of SEQ ID NO:6 [according to claim 136].

138. (Twice Amended) An isolated [A transformed or transfected] host cell comprising a nucleic acid sequence encoding a glial cell line-derived neurotrophic factor polypeptide comprising an amino acid sequence of SEQ ID NO:6 [of claim 136].

153. (3x Amended) A method for the production of glial cell line-derived neurotrophic factor polypeptide, comprising the steps of:

- (a) culturing a transformed or transfected host cell comprising a nucleic acid sequence encoding a glial cell line-derived neurotrophic factor polypeptide under conditions suitable for the expression of said polypeptide, wherein said nucleic acid sequence is operatively linked to a non-native promoter, and wherein said nucleic acid sequence encodes a polypeptide having the capability to promote dopamine uptake in dopaminergic neurons and
 - (i) hybridizes [to a nucleic acid sequence complementary] to an oligonucleotide probe fully complementary to a nucleic acid sequence encoding the amino acid sequence of SEQ. ID. NO:10 under conditions comprising hybridizing said sequences in 6X SSPE and 0.1% SDS at 50°C, followed by washing in 2X SSPE and 0.1% SDS at room temperature and twice in 0.1x SSPE, 0.1% SDS preheated to 50°C; or
 - (ii) hybridizes [to a nucleic acid sequence complementary] to an oligonucleotide probe fully complementary to a nucleic acid sequence encoding amino acids 2 to 86 of SEQ ID NO:4 under conditions comprising hybridizing said sequences in 6X SSPE, 0.1% SDS and 30% formamide at 42°C, followed by washing in 2X SSPE and 0.1% SDS at room temperature and twice in 0.1x SSPE, 0.1% SDS preheated to 50°C; and
- (b) isolating said expressed polypeptide in a substantially purified form from said host cell culture.

159. (Amended) An isolated [A transformed or transfected] host cell which expresses a nucleic acid sequence encoding a glial cell line-derived neurotrophic factor polypeptide, wherein said nucleic acid sequence comprises nucleotides 105 through 506 of SEQ ID NO:5, operatively linked to a non-native promoter; and wherein said polypeptide has the capability to promote dopamine uptake in dopaminergic neurons.

160. (Amended) An isolated [A transformed or transfected] host cell which expresses a nucleic acid sequence encoding a glial cell line-derived neurotrophic factor polypeptide,